

The claims have not been amended. Though Applicants understand how the concerns set forth in the Office Action may have arisen, the rejections made are addressed with the concerns that gave rise to them as follows:

SECTION 112 Rejections

While in some contexts the phrase “can give rise” might indeed be indefinite, in the present context as set forth in claim 30 (as renumbered by the Office) it is definite. The limitation is to a “signal that can give rise to creation of an audio frequency range output in an air medium by interaction of sound waves from said higher frequency vibration with the air medium”

which in the context sets out a signal that is capable of being used in parametric reproduction. One skilled in the art will appreciate this defines a set of characteristics for the signal which enable a specific result: an audio signal reproduced parametrically. However, within that rubric, the largest possible latitude is intended. Applicants could use a phrase such as “enabling the” instead of “can give rise to” but in this context that more “definite” (in the usual context) language gives a meaning for the limitation as a whole that is actually less definite, as it is then unclear that the signal itself can give rise to parametric reproduction. “Can be used to create” or some such language could be substituted, but does not - in this particular context - add clarity and admits of the ambiguity of whether the signal alone or that in combination with other signals can be used (which ambiguity we are willing to live with). This is not an issue Applicants want to further belabor, and if the Examiner - upon further consideration - still feels strongly that amendment is absolutely required (not just “would be nice”) Applicant’s will consider amendment. However, Applicant’s position is that amendment is not required given the particular context of the word usage, and requests reconsideration of the issue in light of Applicants going on record that the phrase in this context is synonymous with phraseology such as “can be used to create” in the context of a signal that is sent to the transducer and is there converted into vibrations that are coupled to the air and “gives rise” (sorry but that phrase just “gets it”) to parametric audio reproduction in the sound column beamed from the transducer.

As to the second point - the lack of antecedent basis for the phrase "said large area film structure" in claim 38 - this is well taken. Applicant suggests the addition of the words "large area" before the words "film structure" in line six of claim 38. If the Examiner agrees that this addresses the problem well, Applicant's propose the amendment be made by Examiner's Amendment and authorization for same is hereby given.

SECTION 103 Rejections

Independent claims 1, 20, 30, 38, 46 and 53 were rejected under 103(a) as obvious over Tanaka, et al. (hereinafter "Tanaka"). The dependent claims thus rejected are allowable for the same reasons the independent claims are allowable as they are narrower in scope, therefore the reasons for allowability of the independent claims will be primarily addressed.

It appears that the basis of the rejection assumes facts as to which some clarification is required. The piezo actuators that are described by Tanaka are almost certainly similar to (or the same as) those Applicants first used in experimentation with this technology. They are bi-morph devices. See Photos 1 & 2, attached. Photo 3 shows an individual bimorph with the housing removed. These are very different from a large area film technology. Indeed they are different from, and operate on different mechanical principles than the film emitters disclosed by applicant. "Film emitter" does not read on them. In fact, office should take note that word "film" was word searched in the Tanaka disclosure. It only appears in connection with the acoustic filter (10 in Figure 5 of Tanaka), and only appears in the drawings in connection with the acoustic filter, contrary to the assertions made in the last Office Action.

Applicants tried early on to take the housings off the bimorph devices and pack them closer together. See Photo 4, attached. However, even in that configuration they do not behave as a continuous film behaves. (Contrary to the Examiner's urging that some sort of film (if it existed) would touch adjacent film of adjacent devices (if it existed) is not possible in these devices.) The bimorph disks do not touch in close packing without covers, and would almost certainly be impaired in function if they did touch.

So, it is respectfully submitted that what Tanaka teaches would lead one skilled in the art away from the invention as set forth in the claims of this application. Applicants' are particularly confident on this point, as it originally led them in another direction too (again see the attached photos, these are efforts of Applicants that preceded their film work). For at least this reason it would not suggest any film technology. In fact at the time of the Tanaka disclosure, use of large film transducers in parametrics was completely unknown.

Furthermore, since Applicant's began using large-area monolithic films, which provide certain unlooked-for advantages as taught in the present disclosure, Applicant's competitors have begun emulating Applicants in this regard, even if they use separate small backplates arranged in an array. Again, this is only *after* Applicants' and their assignees began commercialization of large-area monolithic film emitters.

Moreover, the assertion that there would be no unexpected result from a change of emitter type is without foundation. Applicants found exactly the opposite to be true. Use of large area films, even in transducer types considered much less energetic than piezo bi-morphs, gave unexpectedly good results. For example, consistency of the film across the entire transducer helps align the phase of output from various parts of the emitter face, which has been found to be very advantageous indeed. This would explain, for example, why a competitor might copy Applicants' use of a single sheet of film, even though retaining their prior use of numerous small backplates in an electrostatic transducer device for parametrics.

Regarding the rejections of the dependent claims, these claims are patentable for the same reasons the independent claims are patentable. At least the forgoing reasons apply. Moreover, Applicants want to address just a couple of points on additional cited references, but otherwise will leave discussion to the rejections of the independent claims above.

It is respectfully submitted that only impermissible hindsight connects Tanaka with the other cited references in the combinations proposed. For example, Schindel et al. ("Schindel") teaches away from large area film emitters. Reading the dimensions given in the examples, taken in connection with the drawings, suggests small devices, as are conventionally made for

ultrasonic applications (such as rangefinders, etc.). Schindel made devices for Applicants at one point. They were small and it was observed by Schindel that using the disclosed methodology of making larger area devices were impracticable.

There is no teaching in the Tibbetts reference that suggests the inventor had any notion of the difficulties involved in using an undulating film to produce ultrasonic output (phase angle mismatch, cancellation, etc.) or that the transducer taught could be used in parametric reproduction (where phase match is a real issue). The same can be said of the other references cited: only hindsight suggests the combination.

Schindel et al., does not teach thermoforming of the film. There is no teaching Applicant's can discover that would lead one to conclude that the film is formed in any way other than flat film. The section to which the Examiner points Applicants teaches heat bonding of the film to the etched silicon wafer, not thermoforming of the film.

The dependent claims are patentable for the same reasons the independent claims are patentable.

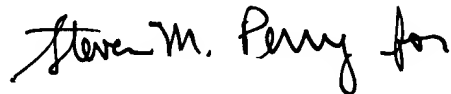
Applicants respectfully and sincerely urge the Examiner to review the references and rejections made in light of the foregoing and to confirm to the Office's satisfaction that the facts are as Applicants have set forth above. Reconsideration of the rejections in light of the foregoing is respectfully requested.

CONCLUSION

In light of the above, Applicant respectfully requests reconsideration of the claims as amended. The Commissioner is hereby authorized to charge any additional fee or to credit any overpayment in connection with this Amendment to Deposit Account No. 20-0100.

DATED this 23rd day of October, 2006.

Respectfully submitted,

A handwritten signature in black ink that reads "Steve M. Perry for". The signature is written in a cursive, flowing style.

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